Wales for 1901–10, the death-rate rises from 250 per million at fifteen years of age to a maximum of 2750 per million at forty-seven years of age, after which it steadily declines to 500 per million at eighty years of age, the curve being almost symmetrical. For London the curve is much the same, though steeper, because the maximum death-rate is higher, being 4500 per million at fifty years of age. Lancashire and Staffordshire show a very similar curve. If, however, we take the figures for North Wales for males for the same period (1901–10), the death-rate rises abruptly from 500 per million at fifteen years of age to 2800 per million at twenty-three years of age, continues at about this level up to fifty years of age, then rises slightly up to sixty years of age, and then declines (the curve for Norfolk is much the same). The curves for London and for North Wales are thus utterly different. Cornwall shows a well-marked secondary rise, and the form of the curve is the same whether the tin-miners, who are specially prone to phthisis, be included or not. For this county the phthisis death-rate rises to about 2600 per million at thirty years of age, declines to 1300 per million at forty years of age, rises again to 3250 at sixty years of age, and then falls.

Similar differences are met with in Scotland. The phthisis death-rate among males in Shetland for the years 1881–1900 rises steeply to 6000 per million at twenty-three years of age; it then falls almost regularly to 1500 per million at fifty years of age, and continues at about this level until seventy is reached. For Midlothian, including Edinburgh, on the other hand, the curve is very similar to the London one, with a maximum death-rate of 3750 per million at 42½ years of age. For Ireland the curve is not unlike the Shetland one, a maximum death-rate of 4500 per million being attained at twenty-seven years of age, with the exception that it declines almost regularly to 500 per million at seventy-five.

From these and other data the conclusion is arrived at that phthisis or consumption of the lungs is not a single disease, but rather a group of diseases, of which one type attacks the young adult, the commonest age of death lying between twenty and twenty-five; a second type has its incidence at middle life, killing most commonly between forty-five and fifty, while a third type may exist, but less certainly distinguished, with its chief mortality between fifty-five and sixty-five. In diseases such as cerebro-spinal fever and pneumonia four or five different races or varieties of the respective specific micro-organisms are now known to exist, and the results of this statistical inquiry suggest that something of the same nature may obtain as regards the tubercle bacillus of pulmonary tuberculosis or phthisis. In the introduction to the report it is stated that the bacteriologist has not yet discovered "type" differences among the human tubercle bacilli of phthisis. This statement is not altogether correct, for certain observers have arrived at the conclusion that there are at least two types of the human tubercle bacillus of phthisis with distinctly different properties, which may be differentiated by certain methods. Other matter of considerable interest is also included in the report, viz. an examination of the phthisis death-rate in London since 1631, the relationship of phthisis to certain occupations (among tin-miners the death-rate is 16,500 per million at fifty to fifty-five, while among coal-miners it never rises above 2000), and the relationship of phthisis to environment. The report is illustrated with twenty-six diagrams showing the phthisis and other death-rates in graphic form, which give a far better idea than words could do of the variations alluded to above.

R. T. HEWLETT.

NOTES.

THOSE engineers who have been advocating the electric drive of ship propellers will read with mixed feelings the announcement made on January 2 by Mr. Daniels, the Secretary of the U.S. Navy, that in the future all the capital ships of that Navy will be electrically driven. There is no reason to doubt that the new American Dreadnought—the *New Mexico*—is a great success. Steam turbines are used, and in order to get their highest efficiency they must be kept running at high speeds. The ship's propellers run at much lower speeds, and so direct driving is out of the question. The turbines are directly coupled to dynamos, and the electric power generated is transmitted to motors directly coupled to the propellers. The relative speed of the turbines and the shafts can be adjusted to any desired value with the greatest ease by merely turning the controller-handle. The experiments undertaken in this country a few years ago were carried out in a timid and hesitating way both from the engineering and the financial point of view, and the results were generally disappointing to the electrician designers. It is possible, but by no means probable, that slow-speed turbines may be developed in the future. In the meantime, we hope that British shipbuilders will make larger use of the electric drive in the future than they have in the past.

THE *Times* for January 3 announces that the world's altitude record has been broken by a British biplane, which flew from Martlesham Heath and attained a height of 30,500 ft.—1500 ft. higher than the summit of Mount Everest. The machine was piloted by Capt. Andrew Lang, R.A.F., with Lieut. Blowes as observer, Capt. Lang having previously made two attempts to beat the American record. It is of considerable interest to note that the height attained was limited by the failure of petrol-pump pressure, due to the rarity of the air, and not by the aerodynamic performance of the machine. The machine was fitted with a Napier Lion engine, but it is not stated whether forced induction was employed to keep up the engine power at this enormous altitude, where the air density is only 28 per cent. of its ground value and the temperature of the order −40° C. It would appear, however, that even greater heights could be reached if minor difficulties, such as those connected with carburation at low temperatures and the maintenance of the pilot's comfort, were overcome. Meanwhile, it is gratifying that the record should be held by British aviators, and we hope that it may continue to be so held in the future.

PRESIDENT WILSON has been given a most cordial reception in Rome during the past few days. He has been admitted a member of the ancient Accademia dei

Lincei, and on January 4 received representatives of the chief universities of Italy. We learn from the account of the visit given by the *Times* correspondent at Rome that the first to be presented were representatives of the University of Rome, headed by the rector, Prof. Tonelli. Signor Salandra, as president of the faculty of law, read an address in Latin recounting the achievements of the President, and conferring on him the degree of doctor in jurisprudence (*honoris causa*). The diploma was then presented by Prof. Tonelli. There followed representatives of the University of Padua, headed by Prof. Lori, who conferred on the President the degree of doctor of laws. Next came the turn of the University of Bologna. Mr. Wilson had already received a degree from the university, but Prof. Galanti gave a special greeting in the name of the university. Last came the Marquis Torrigiani, who, in the name of the University of Florence, conferred on the President the degree of doctor in letters.

The Director of the British Museum (Natural History) has received the following letter from the National Museum of Natural Sciences, Madrid:—"Please let us congratulate very warmly your museum on the end of the great war, so glorious an end for your country and for the cause of universal freedom and peace.—Believe us, sir, yours very friendly, Ignacio Bolivar (director), Eduardo H. Pacheco, Joaquin Gonzalez Hidalgo, Luis Lozano, Lucas F. Navarro, Angel Cabrera, Antonio de Zulueta, Ricardo Mercel, Cándido Bolivar, and Romualdo Gonzales Fragoso." The director of the Museo Nacional wishes the letter to be taken, not as a mere formula of courtesy, but as an expression of sincere feelings of sympathy on the part of the signatories towards this country. We feel sure that our readers will cordially appreciate and reciprocate this friendly message from Spain.

The Faraday Society has arranged a general discussion on "The Present Position of the Theory of Ionisation," to be held on Tuesday, January 21, from 5 to 6.30 and from 8 to 10 p.m. in the rooms of the Chemical Society, Burlington House, W.1. Sir J. J. Thomson will preside over the discussion, which will be opened by Prof. G. Senter. Among contributors of papers will be Prof. S. Arrhenius (Stockholm) Prof. S. F. Acree (Syracuse, U.S.A.), Capt. J. W. McBain, Mr. W. R. Bousfield, Dr. E. Newbery, Dr. N. R. Dhar (Paris), Dr. Henry J. S. Sand, Prof. A. W. Porter, Dr. E. B. R. Prideaux, and Capt. J. R. Partington.

We notice with much regret the announcement of the death on January 6, at sixty years of age, of Col. Theodore Roosevelt, ex-President of the United States of America, and distinguished in the scientific world by his observations on big game and his work for the establishment of bird reservations and other means of conserving places and objects of natural beauty and interest.

The death is announced, in his eighty-ninth year, of Dr. Thomas Buzzard, consulting physician to the National Hospital for the Paralysed and Epileptic, Queen Square, London; ex-president of the Clinical, Neurological, and Harveian Societies; a foreign corresponding member of the Société de Neurolgie of Paris; and the author of many works on diseases of the nervous system.

News has just reached us of the death on October 1 last, in his sixty-first year, of the distinguished mathematician-philosopher, Gaston Milhaud, professor at the Sorbonne, Paris. Prof. Milhaud occupied an almost unique position, indicated in the special subject for which his chair was created by the Sorbonne in 1909, "History of Philosophy in its Relations with the Sciences." His strong historical sense made him especially sympathetic as a philosopher, and enabled him almost instinctively to place himself at another philosopher's point of view—a rare intellectual gift. His first published work, "Leçons sur les origines de la science grecque," appeared in 1893, and marked the special direction of his studies. It was followed in the next year by "L'Essai sur les conditions et les limites de la certitude logique." This was his thesis for the Doctorat ès lettres, and aroused great interest, passing through several editions. Prof. Milhaud is better known in this country by his books "Les philosophes géomètres de la Grèce" and "Etudes sur la pensée scientifique chez les Grecs et les Modernes." During his last years he had been engaged on a special study of Descartes. Portions of this have appeared from time to time in reviews, and the whole, we hope, will now be published.

Count Hertling, German ex-Imperial Chancellor, was one of the great political leaders who combined philosophy as a profession with statesmanship. His first professorship was at Bonn, and in 1880 he became ausserordentliche professor of philosophy in the University of Munich. His principal books are "Materie und Form und die Definition der Seele bei Aristoteles" (1871), "Ueber die Grenze der mechanische Naturerklarung" (1875), "Albertus Magnus" (1880), and "John Locke und die Schule von Cambridge" (1892). He was also the author of numerous articles on political philosophy

Owing to the exciting events which were happening last year, the death of Marcel Déprez, one of the greatest of electricians, on October 18 last, has almost passed unnoticed in this country. In his early life Deprez made many valuable researches by means of various novel devices on the pressures developed in cannons during explosion. It was not until 1881, however, when he was thirty-eight years old, that he devoted himself to the application of electricity to industrial purposes. In that year, in conjunction with Carpentier, he patented the method of transmitting power by high-tension electricity, using step-up and step-down transformers. His profound faith in theory enabled him to surmount the many difficulties with which the early pioneers of power transmission were faced. Deprez was the first to prove that the method was commercially feasible. His study of the curves devised by John Hopkinson to explain the working of a dynamo led him to the invention of the compound winding by means of which the voltage of a dynamo can be maintained constant at all loads. In conjunction with d'Arsonval and Carpentier he invented a series of measuring instruments which are in common use in every country in the world. In 1890 Deprez was elected professor of industrial electricity at the Conservatoire des Arts et Métiers. A long illness and the war prevented him from completing several important scientific and industrial researches on which he was engaged. We unite with our French *confrères* in paying homage to the memory of one whose inventions have played such a notable part in the industrial development of the world.

The death at Tacoma, Washington, U.S.A., on November 14, 1918, is announced of Prof. George Francis Atkinson, head of the department of botany at Cornell University since 1896. Born in 1854, and educated at Cornell, where he graduated in 1885, Prof. Atkinson was appointed associate professor of cryptogamic botany at his own university in 1893. In 1894 he issued, under the title of "The Study of the Biology of Ferns by the Collodion Method," a useful, practical study of fern-structure, especially of the sporangia, spores, prothallia, and embryo. But his work was mainly on the fungi, and he published numerous papers on the life-history, physiology, and taxonomy of members of this group. Much of his work dealt with fungi as the cause of disease, especially in cotton and other cultivated plants. As a guest of the British Association and an active member of the meetings of the International Botanical Congress at Vienna in 1905 and at Brussels in 1910, Prof. Atkinson was known personally to many British botanists. He took a keen interest in the meetings of the Section of Nomenclature at Vienna and Brussels, particularly as regards the various groups of cryptogams.

On January 1 last, by arrangement with the Director of the Meteorological Office, the *Morning Post* commenced the regular publication of the weather map of the previous evening (6 p.m.). The map, two columns wide, is on the same scale as those for 1 a.m., 7 a.m., and 1 p.m. which are given in the official Daily Weather Report. There would seem to be considerable delay in the telegraph service of observations from France, for while reports from the Low Countries, Scandinavia, and Iceland arrive in time for inclusion in the map, those from France are conspicuous by their absence so far. Their prompt arrival would add greatly to the value of the map. Wireless reports from ships out at sea are to be added as soon as the new service is organised.

The year 1918 ended with a remarkably mild December, the mean temperature at Greenwich for the month being 45·8°, which is 5·8° in excess of the normal. The whole month was mild except two days at Christmas and on December 20 and 21. The mean temperature was 2·6° higher than November, and it was warmer than any of the months from January to April inclusive. December was also very damp, although the rainfall was 0·25 in. less than the normal. At Greenwich the mean temperature for 1918 was 50·5°, which is 0·5° above the average. The warmest month was August, with a mean 62·9°, and in July the mean was 62·6° January was the coldest month, with the mean 39·7°. The change of temperature from month to month was greatest from April to May, the mean increasing from 45·2° to 56·4°, a difference of 11·2°. Rain fell on 190 days at Greenwich during the year; the aggregate measurement was 28·5 in., which is 5 in. more than the normal. July was the wettest month with 7·34 in., which is 5·16 in. more than the normal; the month was the wettest July on record, whilst October, 1880, is the only month at any period of the year with a heavier rainfall during the last hundred years. September was also very wet, the rainfall measuring 2·72 in. more than the normal, and at Greenwich it was the wettest September since 1896; of recent years September has been generally dry. March was the driest month with 0·97 in., and February was almost equally dry. Snow fell in London on seventeen days, all from January to April; there was no snow during the later months of the year. Bright sunshine was registered for 1510 hours, which is forty-two hours more than the normal. June was the brightest month with 224 hours' duration of sunshine, and December the dullest with only twenty-six bright hours.

Prof. de Quervain, the well-known Swiss seismologist, has made a suggestion which deserves the very careful attention of our military authorities and of scientific men in this country. There are at present large stocks of high explosives in every country which cannot be preserved and must be denitrated or exploded. He suggests that fifty tons should be exploded at definite times and under various atmospheric conditions, and that observers in all the surrounding area should be requested to listen for the sound. Prof. de Quervain is discussing the necessary arrangements for making such experimental explosions in Switzerland with the military authorities of that country; and it would be difficult to support too strongly his wish that concurrent experiments should be made in Great Britain. If made in the neighbourhood of seismological stations—for example, near Eskdalemuir—the experiments might be of military value. They could not fail to throw far more light than accidental unprepared explosions on the many problems presented by the transmission of sound-waves by the atmosphere. We may add that the Swiss War Office has already presented ten thousand kilograms of lead and steel from its surplus stores for the bob of the new three-component seismograph.

We have received from the Scripps Institution for Biological Research, University of California, a copy of a lecture by Dr. Francis B. Sumner on the value to mankind of experiments on animals. Public opinion over here tends to dismiss the subject as *chose jugée*: and one of the many lessons of the war has been in the proof that thousands and thousands of our men have been safeguarded against typhoid and tetanus by methods gained from experiments on animals. Perhaps in the United States there is more need of this sort of scientific propaganda: and this lecture is a very good historical review of the whole subject. We will not here go over the ground which we have won. But Dr. Sumner makes a point which some of us are apt to forget. He directs attention to the fact that some of the more violent opponents of all experiments on animals are not only lovers of animals, but haters of science and of orthodox medicine. He quotes, for instance, an invitation from the lady who is president of the New York Anti-Vivisection Society to "all anti-vaccinationists, anti-vivisectionists, eclectics, homœopaths, chiropaths, osteopaths, naturopaths of all branches, Christian Scientists, New-Thoughtists, Theosophists, Medical Freedomists, and all brave and honest physicians of the allopathic school (who secretly denounce the machinations and conduct of the political doctors) to enrol as active participants in an Association of Free People against Medical Tyranny." And there are one or two people among us over here who talk more or less like this. It may be perfectly true that the medical man is no better than he ought to be. But, as Dickens says, what a blessing it would be if we were all of us only as good as we ought to be!

The Kew Bulletin (No. 10, 1918) contains a remarkable letter sent to Kew by the late Mr. C. O. Farquharson, mycologist in Nigeria, who was drowned as the result of the loss at sea through collision of the s.s. *Burutu*, on which ill-fated ship he was coming home on leave (see Nature, November 7, 1918). The letter is an epitome of Mr. Farquharson's life-work in Nigeria, and gives a very graphic account of the nature of the work of a tropical mycologist, the methods by which he sought to solve the many difficult problems with which he was confronted, and the kind of education that his experience had led him to believe best for such work. In the course of the letter some interesting observations on the cultivation of groundnuts and on cacao diseases are recorded. The main theme of the letter is that most tropical diseases of cultivated plants are amenable to good cultivation and proper sanitation, and that spraying and the introduction of entomogenous fungi to kill insect pests are rather an expression of ignorance than a real means of combating the troubles due to insect and fungus pests. The letter is deserving of careful attention by all tropical mycologists and by those interested in problems of tropical agriculture, as well as by those who are concerned with the training of mycologists for work in our Colonies.

THE botanical collections made on Mount Korinchi, Sumatra, by Messrs. C. H. Robinson and L. Boden Kloss have recently been worked out by Mr. H. N. Ridley and published in vol. viii., part iv., of the Journal of the Federated States Museums. Mr. Ridley has described the flowering plants and ferns, and the accounts of the mosses and Thallophytes are the work of Mr. H. N. Dixon and Miss Lorrain Smith respectively. These collections throw much light on the highland flora of Sumatra, and it is remarkable that the flora of so large and accessible an island should heretofore have received so little attention. One new genus, Hovella, and no fewer than one hundred and forty-two new species of plants are described, a large number being orchids. It is of interest to find that there is a considerable Himalayan element present in the Sumatran highlands, and some of the genera are also found in Borneo and Malaya. In Malaya, however, they occur only in the Telom mountain district. The Sumatran and Javan mountain floras appear very similar. Two interesting plants, *Goodyera schlechtendaliana* and *Potamogeton oxyphyllus*, var. *fauriei*, have, previous to this, only been recorded from China and Japan. The distribution of the Gesneraceæ is also very interesting, and affords ground for a comparison of the floras of India, Malaya, and Java with that of Sumatra. A very remarkable new Carex, *C. hypolytroides*, was found at 7300 ft. on Korinchi Peak, with stems 6 ft. in height, the whole plant being quite distinct in appearance from any other known Carex.

A VALUABLE contribution to West Australian botany, made by Dr. C. H. Ostenfeld, of Copenhagen, has appeared in *Dansk Botanisk Arkiv* (No. 6, 1916, and No. 8, 1918). Dr. Ostenfeld's studies are based on his visit to Australia with the British Association in 1914. In the first part the "sea-grasses" belonging to the families Potamogetonaceæ and Hydrocharitaceæ are described, with an excellent series of figures in the text, and a new species, *Cymodocea angustata*, is described. A full biological account, including a description of the peculiar vivipary of *Cymodocea antarctica*, is given under each species. In part ii. particular attention is given to the genera Triglochin, Crassula, and Frankenia, with good plates and text-figures, several new species being described. The opening paper consists of a general account of the vegetation with a map, and the mangrove formation, the sandy seashore formation, the salt-pan formation, the sand-dune formation, and the savannah forest formation are discussed in detail. An interesting and characteristic tree of the savannah forest is *Adansonia gregorii*, the only species of this genus known outside Africa. All the other species are confined to tropical Africa, and the original home of the genus appears to have been Madagascar. The Chenopodiaceæ collected by Dr. Ostenfeld are described in part ii. by Dr. O. Paulsen, and four new species are described and figured.

A BRIEF, but extremely interesting, account of the spawning of the little smelt (*Leuresthes tenuis*) appears in *California Fish and Game* (vol. iv., No. 4). This fish appears in immense shoals on all sandy beaches near San Diego during March, April, and May on the second, third, and fourth nights after full moon at full tide. Huge schools then make for the mouth of small fresh-water streams for the purpose of spawning in the sand. The fish apparently strive to get as far shoreward as the waves will carry them. As the water recedes each wriggles down into the sand, at the same time releasing eggs and sperm. The reproductive products discharged, the return to the sea is made by springing back into the next high wave that reaches them. The fertilisation of the eggs thus laid in the sand is effected during the churning-up of the sand by the waves as they rush up the beach. Since these events take place at night, usually from ten to one o'clock, those who have made these observations are to be congratulated, for they have accomplished much under very trying conditions.

THE *American Museum Journal*, vol. xviii., No. 6, contains a brief description of a remarkably perfect skeleton of an Oligocene alligator, from the Big Bad Lands of South Dakota. Though found some years ago, the fossil has only recently been extracted from its matrix. This is a find of some importance, and an excellent photograph of the specimen accompanies this description. It was apparently an immature example, and is minus the tail. But the dermal armature is most wonderfully preserved.

THE thirty-second annual report of the Marine Biological Station at Port Erin shows that in 1918 there were sixteen workers, including eleven senior students in the usual Easter Vacation class. Miss Mayne records some preliminary observations on common littoral organisms with the object of ascertaining the possible density of the population. Choosing the most thickly covered parts of the shore, she found on one square foot of rock 2940 barnacles (*Balanus balanoides*), on another square foot thirty-seven limpets, and in a small pool there were within a square foot twenty-five anemones—twenty Actinia and five Sagartia. Appended to the report is an address by Prof. Herdman on some periodic changes in Nature, with special reference to the changes in the alkalinity of the water of the Irish Sea and the correlated changes in the nature of the plankton.

A REPORT by Prof. Sheridan Delépine on the method recommended by the Sub-Committee of the Anthrax Committee for the Disinfection of Anthrax-infected Wool (see NATURE, June 13, 1918, p. 290, and July 4, p. 347) has been issued (vol. i. of the Report to the Home Office of the Departmental Committee on Anthrax). Prof. Delépine approves generally of the method of disinfection proposed. He directs attention to the importance of temperature in the process—a certain strength of formol which may not destroy the anthrax spores at a lower temperature becomes effective at a higher temperature. The process requires large quantities of warm water for washing the wool, and this wash-water must not be discharged until thoroughly disinfected. The process is applicable only after the bales of wool have been opened, and offers no protection to the workmen engaged in this preliminary work. To be effective also, the process must be carried out thoroughly, the strength of disinfectant and the temperature at various stages being under constant and accurate scientific supervision, and the results frequently controlled by searching tests.

THE Orders which placed glycerine, benzine, methylated spirit, and turpentine on the prohibited list have probably caused much inconvenience to microscopists. In the Journal of the Royal Microscopical Society for September Mr. John Ritchie, jun., describes some experiments on the use of acetone as a solvent for resinous media. Several methods of preparing balsam in acetone are described. The use of acetone enables the object to be transferred directly from alcohol without the intervention of oil of cloves, but balsam so dissolved appears to have a lower refractive index than in cases in which xylol or benzole is the solvent. In this connection it may be mentioned that a recently introduced "turpentine substitute" answers well for thinning balsam that is in a slightly viscid state.

The Saxon State Railways are now submitting their engine-drivers and other responsible train officials to certain tests in their psychometric laboratory at Dresden. According to the *Zeitung des Vereines deutscher Eisenbahnverwaltungen* (October 2), the tests comprise strength of will and endurance, and fatigue where there is physical strain. The Dubois ergograph is used for the purpose, the object being to trace a fatigue curve. The forearm rests on the table; over the middle finger is run a catgut loop, which passes over a pulley, the other end of the gut supporting a weight of from 4 to 8 kg., according to the suitability of the subject. When the middle finger is bent the weight is raised, and when relaxed again the weight is dropped, the process of this motion being traced on a recording drum. With every stroke the drum advances 1 mm., and every two seconds a clockwork movement records a time mark, so that fatigue in terms of time can be read from the final curve. In addition to giving the mean efficiency in metre-ergs per second, the ergogram also shows the degree of fatigue (*i.e.* diminished efficiency) per minute, as well as the number of lifts which the subject has to make in order to do 1 metre-kilogram of work. The system has been said to give satisfactory results as regards the selection of men for the proper posts.

Among announcements of forthcoming books of science we notice the following:—"A Source Book of Biological Nature Study," E. R. Dowling, and "The Geographic and Economic Foundations of the Great War," J. P. Goode (*Cambridge University Press*); "Studies in Neurology," Dr. H. Head, 2 vols., illustrated; "Menders of the Maimed," Prof. A. Keith, illustrated; "A Physical Interpretation of Shock, Exhaustion, and Restoration," Lt.-Col. J. W. Crile; "Manual of War Surgery at the Base," Lt.-Col. S. Barling and Capt. J. T. Morrison, illustrated; "Trench Fever," Major W. Byam; "The Nervous Heart," Dr. A. McNair Wilson, illustrated; and "Surgical Aspects of Typhoid and Paratyphoid Fevers," Col. A. E. Webb-Johnson, illustrated (*H. Frowde and Hodder and Stoughton*); "Catalysis in Industrial Chemistry," Prof. G. G. Henderson; "The Human Machine and Industrial Efficiency," Prof. F. S. Lee; "Experimental Education," Dr. R. R. Rusk; "Education and Social Movements, 1700–1850," A. E. Dobbs; and a new edition, in three volumes, of "A System of Physical Chemistry," Prof. W. C. McC. Lewis (*Longmans and Co.*); "The Problem of Nervous Breakdown," Dr. E. L. Ash (*Mills and Boon, Ltd.*); "Rudiments of Handicraft," W. A. S. Benson (*John Murray*); "Mental Disorders of War," Prof. J. Lepine, edited by Dr. C. Mercier; "Electro-Diagnosis of War," Prof. A. Zimmern and P. Perol, edited by Dr. E. P. Cumberbatch; "Disabilities of the Locomotor Apparatus: The Result of War Wounds," Prof. A. Broca, edited by Major-Gen. Sir R. Jones; and "Wounds of the Pleura and Lungs," Prof. R. Grégoire and Dr. Courcoux, edited by Lt.-Col. C. H. Fagge (*University of London Press, Ltd.*).

OUR ASTRONOMICAL COLUMN.

Schorr's Comet.—Messrs. Braae and Fischer-Petersen have recomputed the orbit of this comet, using observations extending from November 23 to December 10. They find that it is a periodic comet belonging to the Jupiter group.

$$T = 1918 \text{ Sept. } 27{\cdot}5834 \text{ G.M.T.}$$

$$\left.\begin{aligned} \omega &= 278^\circ\ 8'\ 11{\cdot}6'' \\ \Omega &= 117^\circ\ 56'\ 28{\cdot}2'' \\ i &= 5^\circ\ 35'\ 16{\cdot}3'' \end{aligned}\right\} 1918{\cdot}0$$

$$\phi = 28^\circ\ 10'\ 46{\cdot}9''$$

$$\log a = 0{\cdot}551909$$

$$\text{Period} = 6{\cdot}72764 \text{ years.}$$

Ephemeris for Greenwich Midnight.

		R.A.			N. Decl.		Log *r*	Log Δ
		h.	m.	s.	°	′		
January	7	3	57	34	14	46·9		
	11	3	59	1	15	12·4	0·3187	0·1177
	15	4	0	56	15	38·5		
	19	4	3	18	16	5·0	0·3246	0·1487
	23	4	6	6	16	31·5		
	27	4	9	19	16	58·1	0·3308	0·1798
	31	4	12	54	17	24·6		
February	4	4	16	50	17	50·8	0·3370	0·2106

Opposition of Juno.—Juno will be in opposition on January 20, its magnitude being 7·8. The following ephemeris is from the Circular of the Berlin Rechen-Institut:—

		R.A.			N. Decl.		Log *r*	Log Δ
		h.	m.	s.	°	′		
January	5	8	20	53	0	49	0·344	
	13	8	14	11	1	32		0·108
	21	8	6	59	2	32		0·110
	29	7	59	59	3	44		0·117
February	6	7	53	53	5	4		0·130
	14	7	49	11	6	27	0·363	

Twelve New Spectroscopic Binaries.—In a communication to the Journal of the Royal Astronomical Society of Canada (vol. xii., p. 460) Dr. J. S. Plaskett gives particulars of the first twelve spectroscopic binaries which have been discovered with the aid of the new 6-ft. reflecting telescope of the Dominion Astrophysical Observatory at Victoria, B.C. The variable velocities of these stars were detected in the course of the measurement of some of the 750 spectra secured between the arrival of the mirror at the observatory on April 29 and the third week in October. The magnitudes of the stars involved range from 5·0 to 6·32, and it would thus appear that very rapid progress in this field of observation may now be expected. The two stars Boss 4870 and Boss 5236, which are assigned to class A by the Harvard observers, have been found to be of early B type.

The Minor Planet 692 Hippodamia.—This small planet has given a good deal of trouble to those who have endeavoured to follow its movements. Both the eccentricity and inclination are large, the declination at opposition ranging from +51° to −49°, and the magnitude from 12·3 to 14·1. The planet was observed in 1902 and 1911, but sought unsuccessfully in 1915. M. H. Dubosq-Lettré gives new orbit elements in the *Journal des Observateurs* (vol. ii., No. 11), and appeals to observers to search for it.

Observations of Eros.—The *Journal des Observateurs* (vol. ii., No. 11) contains a series of photographic observations of 433 Eros, made in 1917 at the Cape Observatory by Mr. J. Voûte. Owing to its high south declination (about 50°) the planet was invisible in Europe. It will again be in opposition next summer, but, being near aphelion, it will be faint.